

live singly, eat only the parenchyma of the leaf from the under side and hide by day in dry curled leaves that adhere to the twigs or in some other place of concealment on the branch. In this habit they differ from other Nola larvae that I have met with, which do not hide and eat the leaf from the top side only.

Habitat. Texas (Zeller), Colorado (Grote), Santa Barbara and Ventura Counties, California. It will probably also be found in the intermediate territory in the cañons and arroyos where willows grow.

A DIPTEROUS PARASITE OF THE TOAD.

In the *Zoologischer anzeiger*, jahrg. 14, no. 379, Dec. 14, '91, p. 453-455, Duncker describes an interesting case of parasitism. A number of common toads were found in the neighborhood of Kiel with their nares eaten out and their heads swollen in the buccal region. The animals moved about languidly holding their heads down and when kept in confinement rubbed their nares against the walls and floor of the terrarium "as if to relieve themselves of an itching sensation." One of the animals thus confined died and was soon afterwards found completely skeletonized. The moss in which it was buried contained many white fly larvae (8 mm. long, 2 mm. broad). These soon pupated and in about 4 weeks gave rise to more than 50 flies which proved to be *Lucilia sylvarum*. Duncker claims that the eggs or very young larvae are deposited in the nares of the toad. The larvae first eat their way backwards to the buccal region and finally devour all the soft parts of the animal, even the ligaments of the bones. He expressly states that it is not the weak and sickly toads which are selected by the flies, since he has found infected specimens that had just sloughed their skins and were to all appearances in good health. Furthermore none of the infected toads appeared to have been wounded.

HENRY WALTER BATES.

It is not in London alone that the death of Henry Walter Bates will be deplored. He was one of the four entomologists — Wallace, Weismann, and Fritz Müller being the others — who have most distinguished themselves in support of the derivative theory of organic life, and who have gained for it independent evidence from new fields of research with which their names will be indissolubly associated. With the exception of Weismann all are Europeans who gained their inspiration in Brazil, and it was there that Bates was first brought face to face with the most patent facts of mimicry.

The world has admired the unassuming attitude of Darwin and of Wallace, as well as their genius, and the same attitude may be claimed for Bates, whose striking contribution to the philosophy of mimicry was modestly hidden in a systematic essay on the butterflies of the Amazons, the title of which made no reference to the fact. Had it not been accompanied by colored plates specially illustrative of the theory there broached, and had it not appeared in the heat of the Darwinian uprise, it would have lain dormant for many a year. Yet he was the first explanation of the facts to offer a theory worth a moment's consideration; it has since received no correction and no noteworthy modification, and stands today as clear and satisfactory a statement of the whole matter as has ever since been made.

Bates was born Feb. 8, 1825; at twenty-three he left for Brazil where he spent eleven years in collecting. On his return he published his *Naturalist on the Amazons*, which gained him the post of assistant secretary to the Geographical society, which he held until his death, Feb. 16, 1892. His systematic work was mainly in diurnal Lepidoptera and Coleoptera, especially the Carabidae, and, according to McLachlan, he left behind him an incomplete work on the classification of this family besides copious biological notes and

sketches taken in Brazil. He was a man of rugged appearance who had plainly struggled with physical ills, but whose face was lighted by sincerity and geniality, as every American who had the good fortune to meet him will recall.

EXPERIMENTS WITH CHINCH BUGS. — I notice in the second paragraph of the very interesting and important address of Professor Snow published in your last, a slight inaccuracy, to which I should not think it worth while to call attention if it did not seem that his statement as it stands might have the effect to discourage investigation of a subject scarcely touched as yet, by any one. I have never made any attempt to communicate disease to chinch bugs in the field by artificial cultures or in any other way, and hence cannot be said to have failed in this experiment. My experimental work with diseases of this insect has been hitherto limited to the laboratory, where the results have been various, but on the whole very interesting and suggestive. Professor Snow is certainly entitled to great credit for his systematic and persistent experiments with the transfer of the chinch-bug diseases by the method of contagion. The other field is as yet practically unworked.

S. A. Forbes.

PROCEEDINGS OF SOCIETIES.

CAMBRIDGE ENTOMOLOGICAL CLUB.

11 DECEMBER 1891.—The 166th meeting of the club was held at 156 Brattle St. Mr. S. Henshaw was chosen chairman.

Mr. A. P. Morse recorded the capture of *Melanoplus minor* at Sherburne and Wellesley in this State and at North Conway, N. H. According to Mr. Scudder this species has not been previously recorded from New England.

Mr. S. H. Scudder showed some plates he had recently received from Mr. W. H. Edwards of the larvae of *Papilio zolicaon* and of the various stages of *Oeneis uhleri*. This led to some discussion of the distribution of

the species of *Oeneis* and of some other boreal and alpine insects.

Mr. S. H. Scudder remarked that in consequence of the statement in his *Butterflies of New England* (p. 724-725) of the possibility of the occurrence of fleshy filaments in the earliest stages of the larva of *Anosia flexiphus* on the second abdominal segment comparable to those occurring on this segment in *Tasitlia berenice* or on the eighth abdominal segment in both species, he had made a very careful examination of living specimens in the first and second larval stages and found that neither on the second abdominal nor on the third thoracic segment (where filaments occur in other genera of the subfamily) could any trace of them be found.

Mr. Scudder also called attention to a new illustration of the effect of climate on the development of butterflies in some experiments made with *Oeneis semidea*. Out of a lot of eggs laid July 20-25, and widely distributed, the first young caterpillars moulted in West Virginia on August 15; by August 27 two more had changed, together with one in Philadelphia, and on September 5, one had moulted in West Virginia for the second time. In Cambridge, however, the single surviving larva was still in the first stage on Sept. 11, and the same was true at Ottawa as late as Sept. 4, at about which time one passed the first moult, and another early in October.

He then exhibited some interesting new species of Orthoptera lately received from Mr. Blatchley, from Vigo County, Indiana.

Some discussion followed with regard to the gypsy moth (*Ocneria dispar*). Mr. S. Henshaw stated that the larvae of this species are gregarious in Europe, while in this country they scatter soon after hatching.

Mr. Scudder showed a monograph of the trees which furnished the amber of the Baltic, by Conwentz, which contained notes on the diseases of these trees as caused by insects. The work is illustrated by excellent plates, and the borings of a beetle referred to *Anthaxia* and of a fly supposed to belong to *Sciara* are figured.